NEW RECORDS AND TWO NEW SPECIES OF CHERMIDÆ FROM BRITISH COLUMBIA AND WASHINGTON, WITH BIOLOGICAL NOTES

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The specimens on which this paper is based were received through the courtesy of Mr. Oscar Whittaker, Hollyburn, B. C., and Mr. W. Downes, Entomological Laboratory, Victoria, B. C.

Twelve species representing five genera are included in this report. Two of the species, *Aphalara vancouverensis* and *Hemitrioza washingtonia*, are described as new. For each species, *where definitely known*, brief biological notes are given to facilitate the observation and collection of the immature stages or nymphs. Except where otherwise indicated, these notes have been drawn from observations made by the writer in California and Nevada. Types of the new species are in the collection of the author.

Genus Aphalara

Aphalara rumicis Mally

Specimens. One female and one adult with abdomen wanting, from unknown host, Chilliwack, B. C., July 19, 1925, (Oscar Whittaker); two females, from unknown host, Chilliwack, B. C., July 26, 1925, (Oscar Whittaker).

Host:[1] *Rumex* spp. (Dock). The nymphs occur on the ventral side of the leaves curling the margins under lengthwise to form pseudogalls which turn scarlet.[2]

Aphalara vancouverensis Klyver, n. sp.

Fig. 1.

This species is closely related to the group of several species centering about *A. artemisiæ* Förster and in some respects resembles *A. angustipennis* Crawford. It is distinctly different in certain characters that have been regarded as being of specific significance by Crawford and others and is therefore here described as new.

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1 This term is here used to denote a host plant from which the immature stages or nymphs have been taken.

2 Patch, E. M. Notes on Psyllidæ. Maine Agr. Exp. Sta., Bull. 202:217, 1912.

Specimens. Holotype male, FK63.1.1 ♂, from unknown host, and allotype female, FK63.2.1 ♀, from unknown host, Duncan, B. C., June 29, 1922, (W. Downes).

Adults. Length of body on slide, 2.8 to 3.5 mm.; length of fore wing, 2.1 to 2.5 mm.; width of head, .65 to .75 mm. General color gray with a slight yellowish or brownish tinge on the head and thorax and with dark brown to black transverse stripes on the dorsum of the abdomen. The eyes dark brown to black. Tip of antenna black. Genital segment brown. Fore wing semi-opaque and spotted with brown spots and maculæ consisting of several of such spots running together, with the colored areas more numerous distally. Characters of the genus well developed.

Head (Fig. 1, C) as wide as thorax; strongly deflexed. Antenna ten-segmented; about a third longer than width of head; segments four to eight inclusive bearing sensoria.

Thorax strongly arched; without pubescence. Posterior tibia with eight to ten large black teeth at the apex; two claws on the posterior tarsus. Fore wing semi-opaque, punctate, with the points arranged in such a way that they border small circular areas without punctations, the wing spotted with brown areas that each cover one of these, or with several brown areas coalescing to form larger maculæ (Fig. 1, M); wing proportions and venation very similar to that of *A. minutistylus* Klyver.[3] Hind wing relatively large and very delicate in structure; beset with numerous fine points; the venation scarcely distinguishable as irregular rows of points.

Abdomen with the tergites and sternites uniformly and equally chitinized. Genitalia of the male (Fig. 1, K) relatively large, with the lateral lobes longer than the body of the proctiger and with the characteristic hooks of these lobes feebly chitinized; the clasper (Fig. 1, H) with the posterior margin considerably longer in perpendicular length than the anterior margin and terminating in a rounded point; the anterior-mesal aspect bearing a thumb-like process carrying a secondary tooth as illustrated (Fig. 1, G). Genitalia of the female about one-third as long as remainder of abdomen, with the shape and proportions as illustrated (Fig. 1, P).

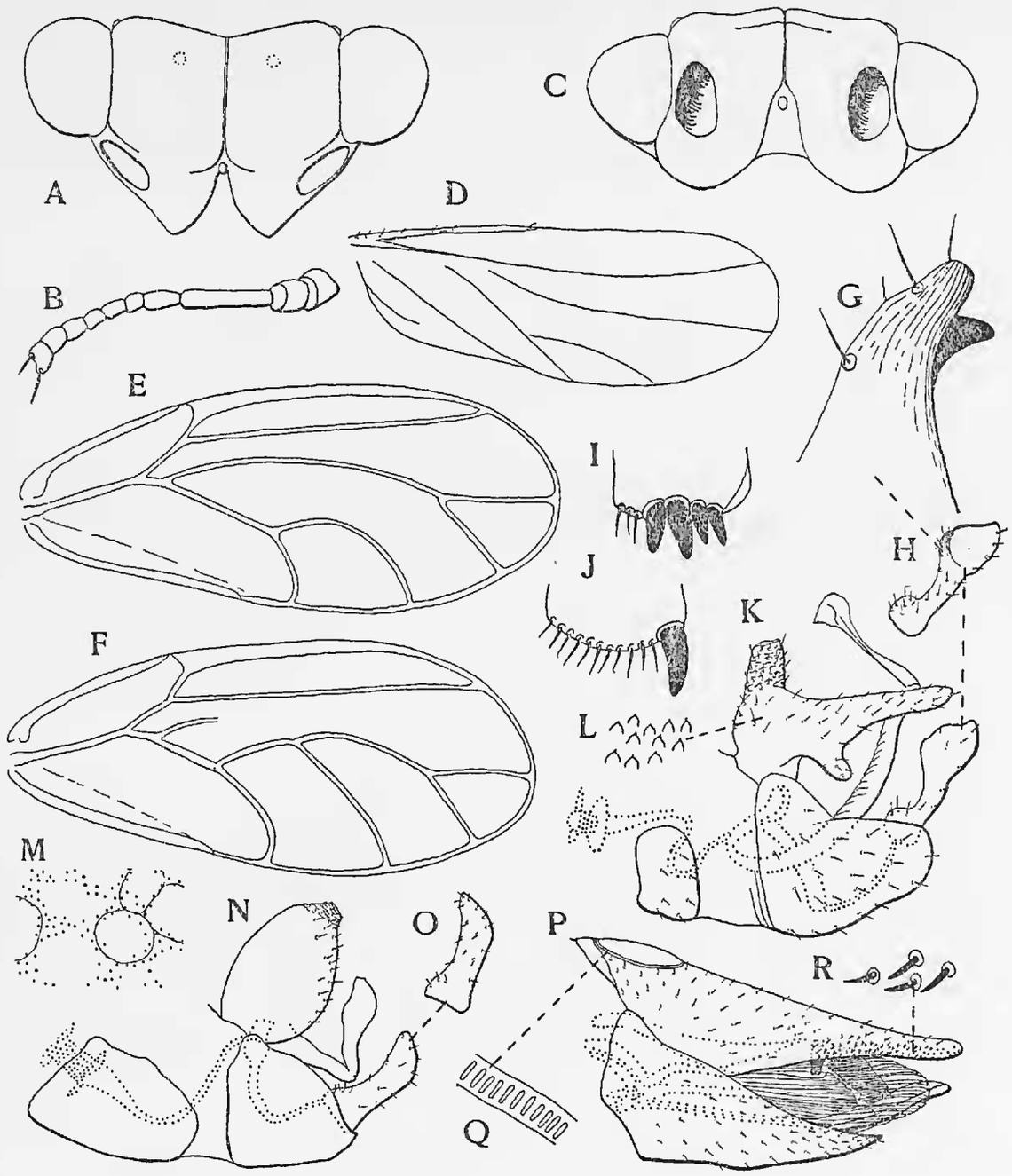
Nymphs. Unknown.

APHALARA NEBULOSA KINCAIDI Ashmead

Specimens. One female, from unknown host, Chilliwack, B. C., May 10, 1926, (Oscar Whittaker); one male, from unknown host, Chilliwack, B. C., May 20, 1926, (Oscar Whittaker); one female, from unknown host, Chilliwack, B. C., April 28, 1926, (Oscar Whittaker).

Host (of the species in Europe): *Epilobium angustifolium* (Fire-Weed, Willow Herb); nymphs of the variety

[3] Pan-Pacific Entomologist, 7:138; Fig. 1, L.



EXPLANATION OF FIG. 1

Hemitrioza washingtonia n. sp. A, head; B, antenna; D, hind wing; E, normal fore wing; F, fore wing with irregular venation; I, inner aspect of apex of posterior tibia; J, outer aspect of same; N, genitalia of male; O, inner aspect of clasper.

Aphalara vancouverensis n. sp. C, head; G, anterior-mesal process of clasper; H, inner aspect of clasper; K, male genitalia; L, scale-like ornamentation of proctiger; M, detail of fore wing membrane; P, genitalia of female; Q, detail of circum-anal pore ring; R, setæ on apex of dorsal valve.

unknown. There is a probability that the variety should be regarded as a distinct species and that the relationship existing here is similar to that between *Trioza urticæ* (L.) and *T. albifrons* Crawford, both of which have nettle for a host, in Europe and North America respectively.[4]

Genus Trioza

Trioza frontalis Crawford

Specimens. Three males and three females, from *Amelanchier*, Victoria, B. C., April 27, 1926, (W. Downes).

Host: Amelanchier alnifolia (Western Serviceberry). Nymphs taken by the writer at Zephyr Point, Lake Tahoe, Nevada, were found isolated individually, in small numbers on the ventral side of the leaves. These specimens were not accompanied by any great abundance of "white floss-like wax filaments" found on the nymphs of *T. obtusa* Patch, a very closely related species taken on *Amelanchier canadensis* during July in Maine.

Trioza maura Förster

Specimens. One male, from unknown host, Thormanby Island, B. C., August 8, 1925, (Oscar Whittaker); one male and one female, from unknown host, Saanich District, B. C., July 30, 1922, (W. Downes).

Host: Salix spp. (Willow). The nymphs are usually found in small numbers isolated singly on the ventral side of the leaves of a variety of willows. Sometimes they form shallow, blister-like areas in which they apparently remain quiescent for some time. In structure they are oval in outline, 2.5 mm. long and 2.0 mm. broad, flat, and very closely appressed to the leaf. The earlier nymphal stages are very imperfectly known.

Genus Hemitrioza

The single specimen at hand substantiates Crawford's observation that the wing venation even in the same individual may be variable (Fig. 1, E. F.).

Hemitrioza washingtonia Klyver, n. sp.

Specimen. Holotype male, FK73.1.1 ♂, from unknown host, Toppenish, Washington, May 2, 1926, (E. W. Davis).

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4 Klyver, F. D. Notes on the Chermidæ. Part I. Can. Ent., 62:167. Pl. 14. 1930.

Adult male. Length of body on slide, 2.0 mm.; length of fore wing, 1.8 mm.; width of head, .6 mm. General color of entire body uniform medium brown. Eyes dark brown. Genæ lighter than the general color. Tip of antenna black. Wings uniform brown (including veins), semi-opaque, shiny; hind wings iridescent. Agreeing fairly well with the characters of the genus as defined by Crawford except that the head is not much narrower than the thorax, the eyes are not proportionately very small, and the hind tibia has four, instead of three, apical spines or teeth on the inner aspect.

Head (Fig. 1, A) strongly deflexed. Antenna (Fig. 1, B) ten-segmented with the third segment nearly as long as segments four, five, six, and seven combined; antennal sensoria obscure; antenna scarcely as long as width of head.

Thorax moderately arched; without pubescence. Posterior tibia with one large black tooth and a comb of setæ (Fig. 1, J) on the outer aspect and with four black teeth, two of them large and two distinctly smaller, on the inner aspect (Fig. 1, I). Fore wing semi-opaque and punctate throughout with a suggestion of alar radulæ in the two marginal cells and between Cu_1 and $M_3 + _4$; normal venation as in Fig. 1, E, with irregular venation, *in the same individual,* as illustrated in Fig. 1, F. Posterior wing (Fig. 1, D) distinctly brown, with the venation as illustrated, developed for the most part as little more than streaks of brown along which the punctations that beset the entire wing membrane are arranged in more or less definite but irregular rows.

Abdomen with the tergites and sternites uniformly and equally chitinized; with small pleurites at the lateral extremities of tergites four, five, six, and seven. Male genitalia relatively small (Fig. 1, N, O); the proctiger oval in lateral view, with sparse pubescence; the clasper simple in structure, with the distal end directed anteriorly.

Adult female and nymph. Unknown.

Genus Euphyllura

Euphyllura arctostaphyli Schwarz

Specimens. One male (17157 Lot 58), June 26, 1925, one male (17157 Lot 64), August 1, 1925, one female (17157 Lot 67), August 4, 1925, and one female (17157 Lot 86), August 25, 1925, all taken from *Pinus ponderosa,* Midday Valley, Merritt, B. C., (Wm. Mathers).

Host: Arctostaphylos spp. (Manzanita). The nymphs are found on the ventral side of the leaves in cases of mild infestation. In more severe cases they are found on both sides of the leaves, on the petioles, smaller branches, buds, and inflorescence. In some instances, the nymphs are simply covered with cottony or flaky wax secretion, but in many cases the last stage nymphs are found in cells 2-3 mm. long, 1.5-2 mm.

broad, and 1 mm. deep made of the wax secretion. In such cases the preceding nymphal stages are apparently all passed in the same cell, since vacated cells with an opening at one end are frequently found with the skins of all but the last stage nymphs embedded in the material forming the wall of the cell.

EUPHYLLURA ARBUTI Schwarz

Specimens. One male and one female, from *Arbutus menziesii,* Gordon Hd., B. C., September 7, 1925, (W. Downes); one male and one female, from Honeysuckle, Galiano, B. C., June 27, 1928, (Oscar Whittaker).

Host: Arbutus menziesii (Madrone; Arbutus Tree). The nymphs occur in cells constructed from the waxy secretion. Typically these cells are found under the bark scales particularly of the smaller branches and twigs where they are more or less protected. In severe cases of infestation they are found on the leaves, petioles, and on unprotected twigs. Usually the wall of the cell and the excretory matter of the nymphs become heavily infested with jet black "sooty mold" which apparently still further obscures and protects the nymphs. The last stage nymphs are found on the smaller branches, on the petioles, or on the leaves entirely unprotected by waxen cells for a short time prior to the last molt.

GENUS PSYLLIA

PSYLLIA PARALLELA Crawford

Specimens. Two females, from unknown host, Chilcotin, B. C., September 1, 1920, (E. R. Buckell); two females, from unknown host, Nicola Lake, B. C., April 13, 1922, (E. R. Buckell); one male and one female, from unknown host, Chilliwack, B. C., February 15, 1923, (Oscar Whittaker); one female, from unknown host, Toppenish, Washington, March 5, 1926, (E. W. Davis).

Host and nymphs unknown.

PSYLLIA ASTIGMATA Crawford

Specimens. One male (2060, "3"), from unknown host, Thormanby Island, B. C., August 8, 1925, (Oscar Whittaker); one female (2082), from unknown host, Thormanby Island, B. C., August 8, 1925, (Oscar Whittaker); one male and three females, from Wild Cherry, Esquimalt, B. C., September 22, 1927, (W. Downes).

Host: Prunus emarginata (Bitter Cherry; Wild Cherry). The nymphs occur in excessive abundance on both sides of the leaves, on the petioles, and the smaller twigs in severe cases of infestation. In such cases they are very conspicuous because of the abundance of flossy threads of waxy secretion several millimeters long, formed by and carried about by the nymphs. As many as thirty-five to forty nymphs were observed on a single leaf in a heavily infested thicket of the host in the Sierra Nevada mountains south of Mono Lake, California, in the latter part of June. At that time adults were exceedingly scarce and the nymphs were apparently all of approximately the same stage.

PSYLLIA ALNI AMERICANA Crawford

Specimens. One female, from Cottonwood, Victoria, B. C., September 8, 1922, (W. Downes); one female, from unknown host, Victoria, B. C., August 14, 1922, (W. Downes); one female, from unknown host, Sooke, B. C., June 30, 1923, (W. Downes); one male, from unknown host, Thormanby Island, B. C., August 8, 1925, (Oscar Whittaker).

Host: Alnus rhombifolia (White Alder). The nymphs occur, sometimes in very great abundance, on the younger leaves and smaller branches in April and May and later in the spring at the higher altitudes. They are conspicuous because of their large amounts of dense white waxy secretion which may sometimes completely cover the leaves.

PSYLLIA CAUDATA Crawford

Specimen. One female, from unknown host, Vancouver, B. C., July 28, 1922, (W. Downes).

Host and nymphs unknown. Adults have been recorded from *Alnus tenuifolia* in Colorado.

A NEW SPECIES OF DOLICHOPODIDÆ FROM JAVA, IN THE COLLECTION OF THE CALIFORNIA ACADEMY OF SCIENCES

BY M. C. VAN DUZEE

Argyra javanensis, new species

Male. Length 7 mm. Face and front wholly opaque with white pollen, occiput green, white pollinose; face as wide as